"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

BALASHOVA, A.P.; LUTSKIY, V.N.; POKALYAKIN, V.I.; CHELYSHKOV, S.P.

Interdepartmental conference on the physical principles of cathode electronics. Radiotekh. i elektron. 7 no.10:1846-1848 O '62. (MIRA 15:10)

(Cathodes—Congresses) (Electron tubes—Congresses)

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

S/109/63/008/002/009/028
D413/D308

AUTHOR: Lutskiy, V.N.

TITLE: On the accuracy of a method for investigating energy spectra of thermal electrons under pulsed emission conditions

PERIODICAL: Radiotekhnika i elektronika, v. 8, no. 2, 1963, 262-268

TEXT: In an earlier paper (Radiotekhnika i elektronika, v. 6, no. 9, 1961, 1566) the author described a method for analysis of thermal electron energies for rectangular anode voltage pulses with amplitudes from zero up to 10 kv, from delay curves obtained with an analyzer using a spherical three-electrode system. This separate assessment of errors is made necessary by a further increase in circuit sensitivity and maximum collector-anode current ratio for work with semiconductor emitters. It is based on measurements of the spectral composition of thermal electrons from a tungsten cathode both with sawtooth pulses acting as delay potential and also for stationary

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On the accuracy ... S/109/63/008/002/009/028
D413/D308

values of collector potential, with integration of the pulsed collector current. It is shown that the design of analyzer used can resolve velocities differing by more than about 0.05 - 0.08 ev, which for 10 kv anode potential gives a resolving power of 5 - 8 x 10^{-6} and is entirely satisfactory. An estimate is given of the error in determining true electron-gas temperature caused by circuit characteristics at high gains, together with a method for correcting the results of measurements. The author thanks M.I. Yelinson for guidance. There are 7 figures and 1 table.

SUBMITTED: June 1, 1962

Card 2/2

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSKIY, V.N.; YELINSON, M.I.

Experimental study of the energy spectra of electrons emitted by a yttrium oxide cathode in strong electrical fields. Radiotekh. i elektron. 8 no.3:457-470 Mr '63. (MIRA 16:3)
(Thermionic emission) (Electric fields) (Electrons--Spectra)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

ACCESSION NR: AP4043352 S/0181/64/006/008/2343/2352

AUTHORS: Yelinson, M. I.; Lutskiy, V. N.

TITLE: Experimental investigation of the spectral composition of hot electrons emitted by a silicon pn junction

SOURCE: Fizika tverdogo tela, v. 6, no. 8, 1964, 2343-2352

TOPIC TAGS: silicon, electron emission, high temperature electron, pn junction, cesium, electron temperature, emissivity

ABSTRACT: In view of the limited scope of the only published report on the subject (J. Z. Moll et al., Phys. Rev. Lett. v. 7, 87, 1961), the authors measured simultaneously the spectral composition of hot electrons and the integral characteristics of a typical hot-electron emitter (cesium-coated silicon p-n junction). The investigations were made on silicon voltage-stabilizer elements rated 20--25 volts. The spectral composition was measured by the retarding-potential

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ACCESSION NR: AP4043352

method in a three-electrode spherical system using slotted anode diaphragms and provided with a removable attachment for cesium coating of the silicon crystal. The test procedure and equipment are briefly described. The results have shown that at high energies the electron energy distribution is Maxwellian. The electron temperature amounts to 4000--5000K. Simultaneous measurements were made of the dependence of the current through the sample on the crystal voltage, the dependence of the emission current on the crystal voltage, and the dependence of the collector current on the collector potential for different values of the crystal voltage. The maximum value of the electron temperatures for the different samples ranges from 1000 to 7000K with the most frequently encountered values being 4000--5000. The saturation of the emission current is connected with the limited growth of the electron temperature as a function of the crystal voltage. "The authors are grateful to V. B. Sandomirskiy for a discussion of the results and to V. N. Kozlov for help with the experiments. Orig. art. has:

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

ACCESSION NR: AP4043352

10 figures.

ASSOCIATION: Institut radiotekhniki i elektroniki AN SSSR, Moscow (Institute of Radio Engineering and Electronics, AN SSSR)

SUBMITTED: 22Feb64

ENCL: 01

SUB CODE: SS, EC

NR REF SOV: 006

OTHER: 005

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

L 38533-65 EWT(1)/EWT(m)/EWP(b)/T/EWA(d)/EWP(w)/EWP(t) JD

ACCESSION NR: AP5005295 S/0181/65/007/002/0521/0523

AUTHOR: Lutskiy, V. N.; Zhirnov, A. A.; Yelinson, M. I.

TITLE: Transverse Hall effect and magnetoresistance of germanium in strong magnetic fields

SOURCE: Fizika tverdogo tela, v. 7, no. 2, 1965, 521-523

TOPIC TAGS: germanium, magnetoresistance oscillation, transverse Hall effect

ABSTRACT: The Hall emf and the magnetoresistance were measured in n-type and p-type germanium in strong magnetic fields (10--200 kOe) at temperatures 300-450K. The purpose of the investigation was to study further the new type of magnetoresistance oscillations predicted by Gurevich and Firsov (ZhETF v. 40, no. 1, 1961

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type germanium in strong magnetic fields

The purpose of the investigation was to study further the new type of magnetoresistance oscillations predicted by Gurevich and Firsov (ZhETF v. 40, no. 1, 1961 and elsewhere). The plots of the Hall emf against the magnetic field intensity agree with previous data, but the plots of the magnetoresistance against the magnetic field intensity display oscillations at sufficiently high temperatures (above 118C) and are attributed to the Gurevich-Firsov effect, although the oscillations are not strictly periodic in the reciprocal of the magnetic field, probably owing

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ACCESSION NR: AP5005295

2

to the complex structure of the electron band of germanium (in the n-type samples) or the complicated composition of the carriers in the p-type samples. Measurements in stronger magnetic fields are necessary for a more detailed interpretation and for quantitative deductions. "The authors are sincerely grateful to V. B. Sandomirskiy for a discussion of the results." Orig. art. has: 4 figures.

ASSOCIATION: Institut radiotekhniki i elektroniki AN SSSR, Moscow (Institute of Radio Engineering and Electronics, AN SSSR)

SUBMITTED: 31Jul64 ENCL: 00 SUB CODE: SS, EM

NR REF SOV: 005 OTHER: 002

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APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

YELINSON, M.I.; ZHDAN, A.G.; KRAPIVIN, V.F.; LINKOVSKIY, Zh.B.; LUTSKIY, V.N.; SANDOMIRSKIY, V.B.

Theory of a "noncontact" version of the emission of hot electrons from semiconductors. Radiotekh. i elektron. 10 no.7:1288-1294 Jl '65. (MIRA 18:7)

1. Institut radiotekhniki i elektroniki AN SSSR.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

L 04417-67 EWT(1) IJP(c)
ACC NR: AP6034273 SOURCE CODE: UR/0386/66/004/007/0267/0270

AUTHOR: Lutskiy, V. N.; Korneyev, D. N.; Yelison, M. I.

ORG: Institute of Radio Engineering and Electronics, Academy of Sciences SSSR (Institut radiotekhniki i elektroniki Akademii nauk SSSR)

TITLE: Observation of quantum size effects in bismuth films by the method of tunnel spectroscopy

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 4, no. 7, 1966, 267-270

TOPIC TAGS: bismuth, silver, tunnel effect, volt ampere characteristic, quantum oscillation, electronic thin film

ABSTRACT: The authors report the results of an experimental investigation of tunnel systems containing size-quantized bismuth films, since theory predicts that the current-voltage characteristics of such a system should reveal a number of specific features that yield information on the structure of the carrier energy spectrum. The measurements were made on Bi (thin film) - dielectric - Bi (thick film), Bi (thin film) - dielectric - Ag, and Bi (thin film) - dielectric - Bi (thin film) systems (Fig. 1). Vacuum rather than a solid dielectric was used for the gap to eliminate parasitic effects. The tunnel system was placed in liquid nitrogen during the measurements. The bismuth films were obtained by evaporation on hot mica in vacuum. The investigated samples ranged from 800 to 1300 Å in thickness. The volt-ampere characteristics of

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ACC NR: AP6034273

the Bi-Ag system and of the Bi (thin film) - Bi (thick film) system show clearly the presence of the expected quantum oscillations. The non-monotonic character of the current variation is even more pronounced when the obtained characteristics are differentiated. The experimentally obtained values of the Fermi energy lie in the range between 0.02 and 0.027 ev, i.e., they are close to the known values of the Fermi energy in bulk bismuth. The distance between the singularities on the volt-ampere characteristic yield an estimate of $\sim 0.012 m_0$ for the component of the effective mass of the electrons in Bi corresponding to the direction of the trigonal axis. This is in good agreement with the known values obtained from measurements of the de Haas - van Alphen effect. The authors thank V. B. Sandomirskiy and Yu. F. Orgin for a discussion of the paper and V. A. Krupennikova for help with the experiments. Orig. art. has: 3 figures.

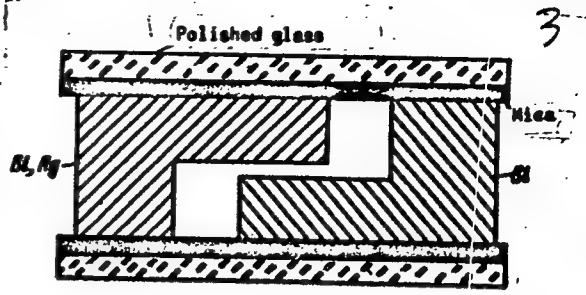

Fig. 1. Diagram of tunnel system

SUB CODE: 20/ SUBM DATE: 09Jul66/ ORIG REF: 004/ OTH REF: 003

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

ACC NR: AP6033660 SOURCE CODE: UR/0000/66/000/000/0423/0426

AUTHOR: Lutskiy, V. N.; Ogrin, Yu. F.; Chel'shkov, S. P.

ORG: none

TITLE: Hall mobility of polycrystalline films in strong electric fields

SOURCE: Voprosy plenochnoy elektroniki (Problems in thin film electronics); sbornik statey. Moscow, Izd-vo Sovetskoye radio, 1966, 423-426

TOPIC TAGS: polycrystalline film, electric field, Hall mobility, electric conduction

ABSTRACT: The conduction mechanism of 1000—3000 Å thick CdS films was studied. The thin films were prepared by vacuum deposition on a glass base at ~1 x 10^{-6} mm Hg of pressure. The dependence of Hall mobility (μ) of films on the magnitude of the electric field was investigated. It was found that the exponential relationship for CdS films is entirely determined by the dependence of μ on the magnitude of the electric field. Assuming that the barrier conductance is the basic conduction mechanism in CdS films, the value of intercrystalline barriers was estimated to be 0.11 to 0.2 ev. Analogous measurements were made with SnO_2 and In_2O_3 films under stationary and pulse operating conditions, and these films displayed a much

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ACC NR: AP6033660

lower increase of mobility under the influence of electric field variations. This is porbably the result of the heating of the current carriers by the strong electric field. Orig. art. has: 2 figures and 3 formulas.

SUB CODE: 20/ SUBM DATE: 27Jun66/ OTH REF: 004

Card 2/2

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSKIY, V.P. (Barnaul)

Fifteen years in the Altai. Fel'd. i akush. 26 no.8:60-61 Ag '61. (MIRA 14:10)

(POPLAVSKII, VASILII NIKITICH, 1885-)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

AUTHOR: Lutskiy, Ya.Ye. SOV/99-58-10-12/13

TITLE: A Useful Book (Poleznaya kniga)

PERIODICAL: Gidrotekhnika i melioratsiya, 1958, Nr 10, pp 59-60 (USSR)

ABSTRACT: The author gives a detailed description and criticism of the book "Water Supply of Pastures in the USSR", by I.F. Volodʹ-ko and M.M. Kundzich.

1. Agriculture 2. Irrigation systems 3. Literature

Card 1/1

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSKIY, YA. Z.

Leguminosae

Albagi for cattle feed. Korm baza 3 no. 6, 1952.

Monthly List of Russian Accessions, Library of Congress, September 1952. UNCLASSIFIED.

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

1. LUTSKIY, YA. Z.

2. USSR (600)

3. Machine-Tractor Stations

4. Work practice of machine-tractor stations serving livestock farms. Korm. baza-3-No. 11 - 1952.

9. Monthly List of Russian Acessions, Library of Congress, February, 1953. Unclassified.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

KUNDZICH, M. K., LUTSKIY, YA. Z.

Wells

Constructing new-type dug wells in Turkmen SSR. Kar. i zver. 5 no. 2, 1952.

9. Monthly List of Russian Accessions, Library of Congress, June, 1952 1953, Uncl.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

DVIGANTSEV. V. I., LUTSKIY, YA. Z.

Karakul Sheep - Uzbekistan

Improve feed supply for collective farm karakul breeding in the Uzbek S. S. R., Kar. i zver, 5, no. 3, 1952.

Monthly List of Russian Accessions, Library of Congress, October 1952. Unclassified.

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSKIY, Ya.Z.

All-Union seminar on pasture water supply and improvement.
Zhivotnovodstvo 19 no.12:83-85 D '57. (MIRA 10:12)
(Uzbekistan--Water supply, Rural)
(Pastures and meadows)

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSKIY, Ya.Z.

Interrepublic conference to study the creation and use of permanent pastures. Zhivotnovodstvo 21 no.3:44-47 Mr '59.
(MIRA 12:4)

(Pastures and meadows)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSKIY, Ya.Z.; RUBTSOV, I.K.

Grass meal is loaded with vitamins. Zemledelie 25 no.12:31-34 D '63. (MIRA 17:4)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSKIY, YUZEF:

LUTSKIY, YUZEF: "Architectural-planning organization of the industrial region of the city (on the example of Warsaw and certain other cities of Poland)." Moscow Architectural Inst. Moscow, 1956. (Dissertation for the Degree of Candidate in Architectural Sciences)

Source: Knizhnaya letopis' No. 28 1956 Moscow

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTS'KO, S., inzh.-podpolkovnik; SHELIKHOV, G., inzh.-mayor

Methods of instrument control. Part 3: Magnetic flaw detection.
Av. i kosm. 47 no.9:71-76 S '64 (MIRA 17:8)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

86-58-5-24/38

AUTHOR: Luts'ko, S. P., Engr Lt Col

TITLE: Present Physical Methods for Detection of Defects (Sovremennyye fizicheskiye metody defektoskoppi)

PERIODICAL: Vestnik vozdushnogo flota,1958, Nr 5, pp 57-60 (USSR)

ABSTRACT: The article describes briefly the six methods used to detect defects in aviation materiel. The magnetic method is used to detect cracks in ferromagnetic parts. For that purpose the "MD-77" stationary universal magnetic defectoscope or the "PMD-3" portable defectoscope is used. The luminescent method is used to detect surface cracks and pores on parts made of any, but mainly nonmagnetic materials. It is less sensitive than the magnetic method. In this method a fluorescent liquid is most frequently used. It contains 85% kerosene and 15% mineral oil, to which 3 g of OP-7 or OP-10 emulsifier is added for every one liter of composition. The color method is used to detect cracks and pores on the surface of separate sections of parts and assemblies made of various materials. At present, new compositions of paints, recommended by officer S. I. Kashnikov are used. Such are red paint made of 950 ml of benzol, 50 ml of MK-8 oil, and 10 g of sudan IV for every one liter of mixture, and white paint made of 700 ml of collodion, 100 ml of RDV diluent, 200 ml of benzol, and 50 g of pigment zinc white for every one liter of mixture. With the aid of these new compositions of paints it is possible to detect the smallest cracks

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Present Physical Methods for Detection of Defects (Cont.)

and pores of 0.001 - 0.005 mm wide and 0.01 mm long at temperatures of 5 - 25°C. The new paints also make it possible to detect intercrystalline and ulcerous corrosion. Of the X-ray method, it is said that it is of high sensitivity. Most promising is the comparatively new gamma method. Its main advantage over the X-ray method is that the source of gamma radiation is portable, simple and cheap. Comparatively new is the ultrasonic method. This method, according to the author was first introduced to the world by the Soviet scientist, Prof. S. Ya. Sokolov in 1929. With the aid of pulsed ultrasonic defectoscopes very small defects located several meters deep inside simple components can be detected. There are 4 photographs.

AVAILABLE: Library of Congress

1. Materials - Defects - Test methods 2. Materials - Inspection methods

Card 2/2

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LuT'sko, S.P.

Defektoskopiya metallov; sbornik statey (Flaw Detection in Metals; Collection of Articles) Moscow, Oborongiz, 1959. 458 p. Errata slip inserted. 4,550 copies printed.

Ed.: D.G. Shrayber, Candidate of Technical Sciences; Ed.: M.S. Lagovskaya; Tech. Ed.: V.P. Bozhin; Managing Ed.: A.S. Zagorovskiy, Engineer.

PURPOSE: This book is intended for engineers and technicians in the field of nondestructive inspection and testing of metals.

COVERAGE: This collection of articles deals with methods of nondestructive inspection and testing of metals. Results of investigations conducted at scientific research institutes and plants of magnetic, electrical, X-ray, ultrasonic, and fluorescent-penetrant methods of flaw detection are described. Detailed descriptions of flaw-detection methods and equipment are presented. Data are given on the status of the development of flaw-detection methods in non-Soviet countries. No personalities are mentioned. Bibliographies follow several of the articles.

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Rybina, D.G. Measuring Magnetic Fields on Parts of Intricate Shape and Inspection of Blades by the Magnetic-particle Method 55

Nikonovich, P.G. Equipment for Inspecting Parts by the Magnetic-particle Method 62

Semov, P.M. Automatic Flaw Detector for Inspecting Mass-produced Steel Parts 76

Bodnarchuk, S.N., and G.Ts. Bile-Kovtiskiy. Electromagnetic Induction Method of Flaw Detection 80

Bakalov, I.F. Some Methods and Instruments for Nondestructive Inspection of the Thickness of Coatings on Parts 111

Rybakovskiy, V.N. Practical Application of Electromagnetic Methods of Nondestructive Testing 117

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Chernobrovov, S.V. X-Ray Tube With Rotating Anode 219

Shrayber, D.G. Ultrasonic Flaw Detection 241

Lange, Th.V., and G.V. Prorokov. Equipment for Ultrasonic Inspection 256

Lange, Th.V., and D.G. Shrayber. General Characteristics of the Pulse-Echo Type Ultrasonic Flaw-detection Method 267

Bulk, A.A. Characteristic Features of the Pulse-Echo Type Ultrasonic Flaw-detection Method 306

Shargin, N.K. Ultrasonic Flaw-detection in Forgings and Valuation of the Size of the Defects Revealed 309

Lange, Th.V., and G.V. Prorokov. Automation of Ultrasonic Inspection 313

Shrayber, D.G., and Yu.Ya. Yemnin. Application of Ultrasonic Vibrations for Processing and Testing Materials 328

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

ACC NR: AP6035735 (N) SOURCE CODE: UR/0413/66/000/019/0098/0098

INVENTOR: Shelikhov, G. S.; Luts'ko, S. P.

ORG: none

TITLE: Method of magnetic inspection. Class 42, No. 186750

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 19, 1966, 98

TOPIC TAGS: nondestructive ~~inspection~~ test, weld inpsection, ~~magnetic weld inspection~~, weld evaluation

ABSTRACT: This Author Certificate introduces a method of nondestructive magnetic weld inspection with a magnetized powder suspension. To make the suspension selective for some specific defects, magnetizing of the suspension is done by a magnetic field adjusted to a certain intensity.

SUB CODE: 13/ SUBM DATE: 09Jan65/ ATD PRESS: 5106

Card 1/1 UDC: 620.179.141

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

ACC NR: AP6021469 SOURCE CODE: UR/0413/66/000/011/0092/0092

INVENTOR: Shelikhov, G. S.; Luts'ko, S. P.; Krents, E. A.

ORG: None

TITLE: A device for automatically controlling the intensity of the magnetizing field in magnetic flaw detectors. Class 42, No. 182386

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 11, 1966, 92

TOPIC TAGS: flaw detection, magnetic detection equipment, magnetic field intensity

ABSTRACT: This Author's Certificate introduces a device for automatically controlling the intensity of the magnetizing field in magnetic flaw detectors by using an indicator which measures the intensity of the magnetic field at the surface of the component being magnetized. This indicator may be a Hall transducer which generates voltage to serve as a positive feedback for transmission to a magnetic amplifier connected in the magnetizing current source circuit. The device is designed for improved accuracy in magnetic inspection of parts with complex shapes by maintaining a given magnetizing field intensity on the surface of the component. A current limiter with an adjustable range is connected between the transducer and the magnetic amplifier. The range of this limiter is set to correspond to the required intensity of the magnetic field to be checked by the transducer.

Card 1/2 UDC: 620.179.14.05

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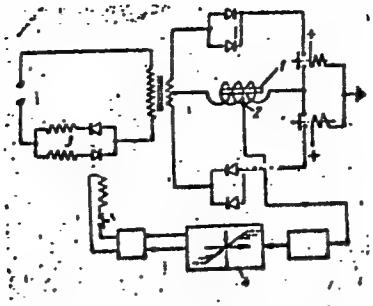
ACC NR: AF6021469



1--component to be magnetized;
2--transducer; 3--amplifier;
4--limiter

SUB CODE: 09, 13/ SUBM DATE: 10May63

Card 2/2

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

L 09001-67 EWT(d)/EWP(e)/EWP(v)/EWP(k)/EWP(l) IJP(c)

ACC NR: AP6012157 SOURCE CODE: UR/0413/66/000/007/0073/0073

AUTHORS: Shalikhov, G. S.; Kondrashova, G. P.; Volkov, Ye. S.; Medov, B. P.; Sidnev, N. F.; Luts'ko, S. P.; Snopov, G. A. 45

ORG: none

TITLE: Magnetic flaw detector. 14 Class 42, No. 180391

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 7, 1966, 73

TOPIC TAGS: flaw detection, magnetic amplifier, magnetic method

ABSTRACT: This Author Certificate presents a magnetic flaw detector containing a power transformer, electromagnets, a capacitor, and rectifiers through which pulsed discharge of the capacitor is produced, and an automatic circuit controlling the rectifier triggering. Longitudinal magnetization in the automatic circuit is produced by electromagnets, and circular magnetization—by the gating of the pulsed current. To check parts of any size or form with subsequent total demagnetization, the controlled rectifiers are in the form of opposing controlled semiconductor diodes and are connected in the transformer primary and secondary circuits. The control electrodes of the primary diodes are connected to the

UDC: 620.179.141.1/.2

Card 1/2

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

L 09001-67

ACC NR: AP6012157 O

capacitor discharge circuit. The control electrodes of the secondary diodes are connected to the automatic circuit. To establish the required strength of the magnetization current and the reversing frequency of the demagnetization current, the automatic circuit contains magnetic amplifiers whose outputs are connected to the control electrodes of the transformer secondary, and the input windings—with a potentiometer.

SUB CODE: 13, 14, ~~14, 20~~ 09/ SUBM DATE: 31Dec64

Card 2/2 nst

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSKOV, V., podpolkovnik, kand.pedagogicheskikh nauk

In what does the essence of training lie. Starsh.-serzh. no.11: 18-19 O[i.e. N] '61. (MIRA 15:2)
(Military education)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSKOV, V., podpolkovnik, kand.pedagogicheskikh nauk

In what does the essence of training lie. Starsh.-serezh. no.12:26 D '61. (MIRA 15:3)
(Military education)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

BARABANSHCHIKOV, A.V., podpolkovnik, kand. pedag. nauk; GALKIN, M.I., polkovnik, kand. fil. nauk; D'YACHENKO, M.I., podpolkovnik, kand.ped.nauk,dots.; KOTOV, N.F., polkovnik,kand. ped.nauk; KOROBEYNIKOV, M.P., polkovnik, kand.ped.nauk; KRAVCHUN, N.S., kapitan 2 ranga, kand.ped.nauk, dots.; LUTSKOV, V.N., kand. ped. nauk, podpolkovnik; FEDENKO, N.F., kapitan, kand. ped. nauk, dots.; SHELYAG, V.V., kapitan 1 ranga, kand. fil.nauk; VOSTOKOV, Ye.I., general-mayor, kand. ist. nauk; KUBASOV, A.F., general-leytenant zapasa, red.; BELOUSOV, G.G., general-mayor, red.; TREFILOV, N.F., kapitan 2 ranga, red.; MURASHOVA, L.A., tekhn.red.

[Fundamentals of military pedagogy and psychology; a training aid] Osnovy voennoi pedagogiki i psikhologii; uchebnoe posobie. [By] A.V.Barabanshchikov i dr. Moskva, Voenizdat, 1964. 383 p. (MIRA 17:2)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSKOV, Vasiliy Nesterovich, kand. ped. nauk; LISENKOV, M.K., podpolkovnik, red.

[Fundamentals of the methodology of military education; advice to sergeants and master sergeants] Osnovy metodiki voinskogo vospitaniia; sovety serzhantam i starshinam. Moskva, Voenizdat, 1964. 117 p. (MIRA 18:2)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSKOVA, M. T.; PROTSENKO, O. L.

Use of thermophilic ferments in the making of ripened cream butter on a continuous production line. Khar. prom. no.1: 27-30 Ja-Mr '63. (MIRA 16:4)

1. Ukrainskiy nauchno-issledovatel'skiy institut myasomolochnoy promyshlennosti.

(Butter) (Fermentation)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

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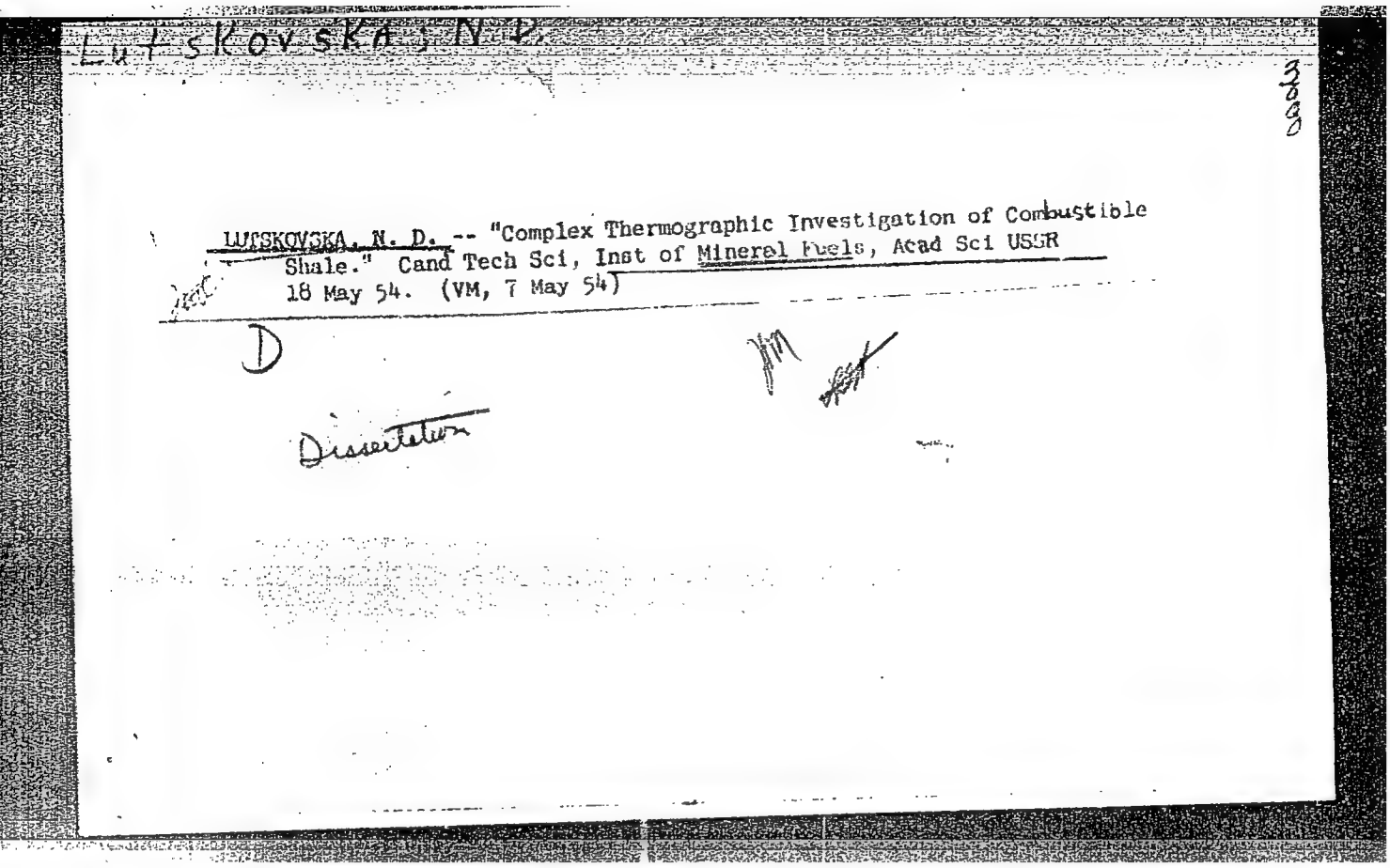

Lutskovska, N. D.

LUTSKOVSKA, N. D. -- "Complex Thermographic Investigation of Combustible Shale." Cand Tech Sci, Inst of Mineral Fuels, Acad Sci USSR 18 May 54. (VM, 7 May 54)

D

Dissertation

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

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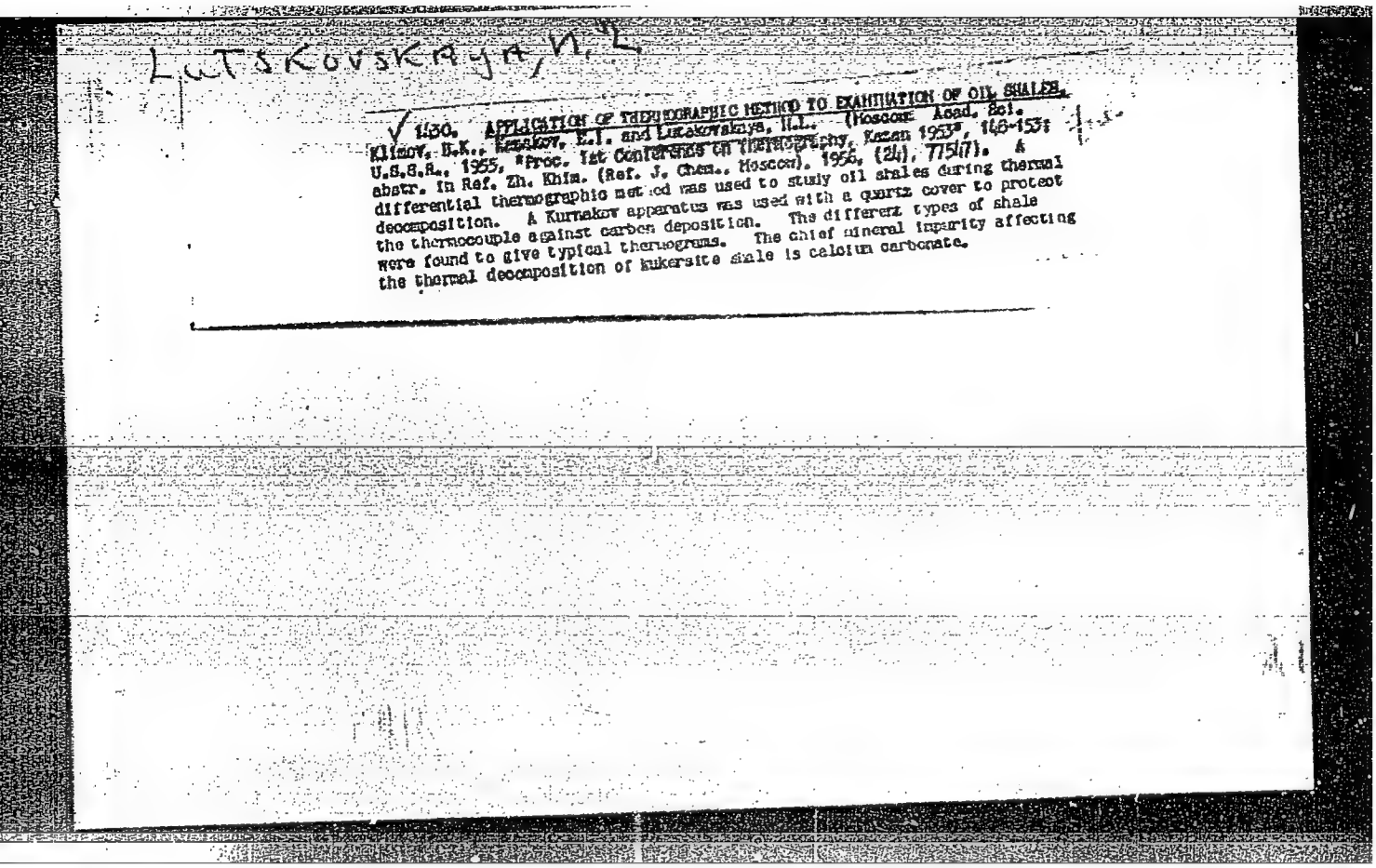

LUTSKOVSKAYA, N.L.

1430. APPLICATION OF THERMOGRAPHIC METHOD TO EXAMINATION OF OIL SHALES. Klimov, D.K., Kamakov, K.I. and Lutskovskaya, N.L. (Moscow Acad. Sci. U.S.S.R., 1955, "Proc. 1st Conference on Thermography, Kazan 1953", 146-153; abstr. in Ref. Zh. Khim. (Ref. J. Chem., Moscow), 1956, (24), 77514). A differential thermographic method was used to study oil shales during thermal decomposition. A Kurnakov apparatus was used with a quartz cover to protect the thermocouple against carbon deposition. The different types of shale were found to give typical thermograms. The chief mineral impurity affecting the thermal decomposition of kukersite shale is calcium carbonate.

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSKOVSKAYA, N.L.

23-3-3/8

SUBJECT: USSR/Fuel, Oil Shale

AUTHORS: Valdek, R.G., Kirret, O.G., Lutskovskaya, N.L., Polikarpov N.K., Candidates of Technical Sciences

TITLE: On Some Physical and Physico-Chemical Properties of Estonian Oil Shale (Kukersite) and its Coke and Semi-Coke Products (O nekotorykh fizicheskikh i fiziko-khimicheskikh svoystvakh slantsa-kukersita, yego koksa i polukoksa)

PERIODICAL: Izvestiya Akademii Nauk Estonskoy SSR, Seriya Tekhnicheskikh i Fiziko-Khimicheskikh Nauk, 1957, # 3, pp 229-244 (USSR)

ABSTRACT: Research has been carried out to investigate changes in the properties of oil shale and its coking products, in dependence on the composition of crude oil shale and on its thermal treatment conditions.
Various samples were investigated: shale-coke obtained from the Kohtla-Jarve Plant chamber-ovens, semi-coke of Kivioli mines, as well as cokes and semi-cokes obtained by their retorting in a laboratory installation at 520°, 700°, and 900° C.

The results of the research prove that heat conductivity of oil shale increases with the increase of its apparent specific gravity and decreases with the increase of its "kerogen"-content.

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

23-3-3/8

TITLE: On Some Physical and Physico-Chemical Properties of Estonian Oil Shale (Kukersite) and its Coke and Semi-Coke Products (O nekotorykh fizicheskikh i fiziko-khimicheskikh svoystvakh slantsa-kukersita, yego koksa i polukoksa)

By conversion of oil shale into semi-coke, its real specific gravity and porosity increase, and continue to increase with the rise of the coking temperature up to 900°C.

The apparent specific gravity and heat conductivity decrease while oil shale is converted into semi-coke. The reduction of semi-coke heat conductivity is due to the increase of its porosity in comparison with oil shale.

An analysis of shale-cokes has shown that changes on the composition of coke organic matter depend mainly on the coking temperature and only to a very small extent on the chemical composition of the oil shale.

Thermographic characteristics of oil shale and coke samples show the dependence of thermal effects on their composition.

An analysis of sieve fractions of crushed samples from Kohtla-Yarve chamber-oven coke and Kivioli tunnel-oven semi-coke has shown that the content of organic substances is higher in the finer fractions and that calorific values of the latter are

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

23-3-3/8

TITLE: On Some Physical and Physico-Chemical Properties of Estonian Oil Shale increases with the increase of its apparent specific gravity and decreases with the increase of its "kerogen"-content.

higher.
Sieve fractions of crushed coke were tested concerning their adsorbing abilities. It turned out that although coke adsorbs methylene blue it does not possess the ability to adsorb sulfur compounds from oil shale gasoline and cannot be used for its desulfurization.

The article contains 4 graphs and 11 tables. There are 10 references, 9 of which are Slavic.

ASSOCIATION: Institute of Power-Engineering of the Estonian Academy of Sciences.

PRESENTED BY:

SUBMITTED: On 1y December 1956

AVAILABLE: At the Library of Congress.

Card 3/3

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSKOVSKAYA, N. L., and VAL'DEK, R. G.

"On the Heat of Shales of the Organic Substance of Estonian, Shales Decomposition."

Report submitted for the Conference on Heat and Mass Transfer, Minsk, ESSR, June 1961.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

VALDEK, R., kand.tekhn.nauk; LUTSKOVSKAYA, N.L., kand.tekhn.nauk;
Prinimal uchastiye: VERK, A., inzh.

Thermal diffusivity of kukersite during heating and thermal decomposition. Eesti tead akad tehn fuus no.3:207-214 '61.

1. Academy of Sciences of the Estonian S.S.R., Institute of Energetics.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSKOVSKIY, D.M., inzhener.

Utilizing local fine sands in concrete. Nov.tekh.i pered.op.v stroi. vol.19:22-26 Ag '57. (MIRA 10:10)

(Moldavia--Concrete)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSKOVSKIY, D. M.,Cand Tech Sci -- (diss) " Study of fine sands of Moldavia ~~to determine~~ for the purpose of their use in concretes and solutions." Kishinev,1958. 16 pp with graphs. (Min of Higher Education UkSSR. Kiev Construction Engineering Inst). 100 copies.
(KL, 12-58,98)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSKYY, Viktor

[Growing sugar beets in the western provinces of the Ukraine] Vyroshchuvannia tsukrovykh buriakiv v zakhidnykh oblastiakh URSR. Lviv, Knyzhkovo-zhurnal'ne vyd-vo, 1955. 82 p. (MLRA 10:3)
(Ukraine--Sugar beets)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSOV, R.V.

S/185/60/005/003/015/020
D274/D303

AUTHORS: Pashkovs'kyy, M.V., Lutsiv, R.V. and Savyts'kyy, I.V.

TITLE: On obtaining high-purity sulfur

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 5, no. 3, 1960, 418-420

TEXT: Commercial sulfur was purified by vacuum refining with subsequent zone melting. The purified sulfur was needed for growing HgS-crystals. The method of vacuum refining was chosen owing to the fact that the original material contained Al, Ca, Mg, Mn, Cu, Fe, As, Si and organic admixtures. The commercial sulfur was dried at a temperature of approximately 100°C in a strong air current; then it was closed in a distillation chamber at a temperature of 2 - 3 degrees below melting point, for 5 - 6 hours, under the continuous action of a fore-vacuum pump. The vacuum distillation was carried out at various temperatures; it was found that excessive temperatures have an adverse effect on the quality of the sulfur;

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On obtaining high-purity sulfur

therefore, the distillation was carried out at a few degrees above melting point. 150 - 200 g sulfur were kept in one chamber; the first distillation lasted for up to three hours. The following distillations lasted longer. Such short duration of the process and the suitable temperatures had the result that most of the impurities were deposited at the bottom of the chamber. The sulfur crystallized on the walls of a test tube; after 5 vacuum distillations, the central part of the crystallized sulfur film could be used for further purification by zone melting. The zone melting was carried out in glass containers, at 10^{-3} mm Hg. Zones of 15 - 20 mm length were formed. The sulfur obtained by the above method was compared (qualitatively), by means of spectral analysis, with "special-purity" sulfur of type VTU, no. 9-56; it was found that with respect to several admixtures (Al, Mg, Cu), the obtained sulfur was purer than that of type VTU. The above method permits uninterrupted purification of sulfur, as well as in sufficient quantities. There are 2 figures and 3 references: 1 Soviet-bloc and 2 non-Soviet-bloc (which include a translation into Russian). The reference

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

S/185/60/005/003/015/020
On obtaining high-purity sulfur D274/D303

to the English-language publication reads as follows: W.E. Medcalf and R.H. Fahrig, J. Electrochem. Soc., 105, no. 12, 719-723, 1958.

ASSOCIATION: L'vivs'kyy derzhavnyy universytet im. Ivana Franka (L'vov State University im. Ivan Franko)

SUBMITTED: January 6, 1960

Card 3/3

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

L 1803-66 EWT(1)/EWT(m)/EWA(b)-2 RO

ACCESSION NR: AP5019518 UR/0244/65/024/004/0003/0009
615.9+614.3 :632.95

AUTHOR: Shtenberg, A. I. (Professor; Head of laboratory); Lutsoya, Kh. I.

TITLE: Toxicological study of combined effects of pesticides

SOURCE: Voprosy pitaniya, v. 24, no. 4, 1965, 3-9

TOPIC TAGS: toxicology, pesticide, poison effect, combinatorial analysis, experiment animal

ABSTRACT: Based on studies at the author's institute, recommendations are made which complement those issued earlier for single pesticides. The need for animal studies of acute, subacute and chronic toxicity of various ratios of combinations is stressed. The effect of pesticide combinations may be summary, synergistic or antagonistic. Combinations of LD_{50} of each component are studied to determine to which of the 3 types the mixture belongs. Toxicity changes upon successive introduction of the components must be considered. The technique of animal tests is briefly described. Subacute tests help determine toxicodynamics and threshold toxic doses. Chronic tests should be conducted by add-

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L 1803-66
ACCESSION NR: AP5019518

3

ing natural irritants, such as cold, hunger or infection, to the usual test conditions. The results of all 3 kinds of tests for various pesticide combinations will determine final standards for pesticide applications. Orig. art. has: 1 figure

ASSOCIATION: Laboratoriya toksikologii yadokhimikatov Instituta pitaniya AMN SSSR, Moskva (Toxicological Laboratory of Chemical Poisons, Food Institute, AMN SSSR, Moscow)

44,55

SUBMITTED: 22Apr64 ENCL: 00 SUB CODE: LS

NR REF SOV: 014 OTHER: 009

Card 2/2

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSOYA, Kh.I. (Moskva)

Content of residual quantities of DDT, TMTD and methylethylthiophos in apples after their combined use in treating fruit trees. Vop. pit. 24 no.1:9-13 Ja-F '65. (MIRA 18:9)

1. Laboratoriya toksikologii yadokhimikatov (zav.- prof. A.I. Shtenberg) Instituta pitaniya AMN SSSR, Moskva.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

L 30780-66 EWT(1)/T JK

ACC NR: AP6022124 SOURCE CODE: UR/0016/66/000/003/0154/0155

AUTHOR: Titov, M. B.; Lutsuk, A. S.

ORG: L'vov Medical Institute (L'vovskiy meditsinskiy institut)

TITLE: Ornithosis in the western oblasts of the Ukraine

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 3, 1966, 154-155

TOPIC TAGS: epidemiology, animal disease, man, respiratory system disease, diagnostic medicine

ABSTRACT: Ornithosis has been rarely diagnosed in the western oblasts of the Ukraine, L'vovskaya Oblast in particular, mainly because the symptoms resemble pneumonia and other diseases. Over a period of 3 years the authors examined 281 persons, 247 with different diseases and 34 healthy workers in a meat-packing plant. Thirty-eight reacted positively to a skin test, including 28 sick and 10 healthy persons. Eight of the sick persons were diagnosed as having pneumonia or other respiratory diseases. Six times more females than males reacted positively, apparently, according to the authors, because they have more contact in their daily lives with poultry. In addition, four and one-half times more positive reactions were noted in those who had occupational contact with poultry than in those with other jobs. The authors conclude that ornithosis is present in L'vovskaya Oblast (both in symptomatic and in asymptomatic forms) but is misdiagnosed. They recommend the use of the skin test for retrospective diagnosis within a year after the individual contracted the disease. [JPRS]

SUB CODE: 06 / SUBM DATE: 18Dec65

Card 1/1 UDC: 616.988.73-036.2(477.8)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSUK, V., inzh.

Ultrasonic generator. Radio no.3:27-28 Mr '64 (MIRA 17:7)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSUK, V.Ya.; MIKHEL'MAN, A.I.

Use of ultrasonic waves in the manufacture of oil-base lacquers for leather. Leh.prom. no.1:34-35 Ja-Mr '63. (MIRA 16:4)

1. TSentral'naya nauchno-issledovatel'skaya laboratoriya Ivano-Frankovskogo soveta narodnogo khozyaystva (for Lutsuk). 2. Ivano-Frankovskiy fakul'tet obshchey tekhnologii L'vovskogo politekhnicheskogo instituta (for Mikhel'man).

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

MIKHEL'MAN, A.I.; LUTSUK, V.Ya.

Application of ultrasonic waves in the production of phenol-formaldehyde resins. Leh.prom.no.1:48-49 Ja-Mr '64. (MIRA 19:1)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

KORNEV, V.A.; LUTSUK, Ye.M.; SUNGUROV, A.M.

Basic characteristics of the tectonics of the Caspian Sea based on marine geophysical data. Sov.geol. 5 no.12:80-99 D '62. (MIRA 16:2)

1. Nauchno-issledovatel'skaya morskaya geofizicheskaya ekspeditsiya Vsesoyuznogo nauchno-issledovatel'skogo instituta geofiziki.
(Caspian Sea region—Geology, Structural)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSYK, V.I., inzh.

The FEMOON photoelectronic device for automatic stopping of high-speed warp-knitting machines at thread breakage. Izv. vys. ucheb. zav.; tekh. leg. prom. no.1:153-174 '58. (MIRA 11:6)

1.Kiyevskiy tekhnologicheskiy institut legkoy promyshlennosti.
(Electronic control)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSYK, V.I.

25(1) PHASE I BOOK EXPLOITATION SOV/3207

Kiriyenko, Yevgeniy Grigor'yevich, Vladimir Iosifovich Lutsyk, and Georgiy Avgustinovich Piskorskiy

Kholodnaya shtampovka (Cold Stamping) Moscow, Mashgiz, 1959. 167 p. Errata slip inserted. 20,000 copies printed.

Reviewer: M.Ya. Levitskiy, Candidate of Technical Sciences, Ed.: A.V. Sivay, Docent; Chief Ed. (Southern Division, Mashgiz): V.K. Serdyuk, Engineer.

PURPOSE: This textbook is intended for individual and group training of press operators for cold-stamping operations. It may also be useful to skilled press operators.

COVERAGE: The book deals with the following topics: basic problems of production organization in cold-stamping shops; fits and tolerances; inspection and measuring instruments; cold-stamping processes and equipment; and the mechanization and automation of cold-stamping operations. Also discussed are reading of drawings, problems of labor organization, time-standard setting, wages, and safety engineering. No personalities are mentioned. There are 20 references, all Soviet.

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

SOV/3207

Cold Stamping 3

Introduction 8

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2. Brief Information on Metals and Auxiliary Materials 26
3. Reading Drawings 37
4. Fits and Tolerances 42
5. Inspection and Measuring Instruments 51
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7. Die Sets and Attachments 88
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9. Automation of Stamping Operations 141
10. Inspection of Stamped Parts. Rejects in Stamping

Card 2/3

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSYAK, V.C.; TURSKOV, L.A.; KULESHOVA, M.P.

Effect of ultrasonic treatment on the [illegible] of [illegible]. Metalloved. i term. obr. met. no.10:57-58 O '62.

(MIRA 15:12)

1. Donetskiy filial Ukrainskogo nauchno-issledovatel'skogo instituta metallov.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

KULESHOVA, N.P.; LUTSYAK, V.G.

Solubility of zirconium in low carbon steel ferrite. Metalloved. i term. obr. met. no.12:43-44 D '64 (MIRA 18:2)

1. Donetskiy filial UkrNIImetallov.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

L 21805-65 EWT(m)/EPF(n)-2/EWA(d)/T/EWP(t)/EWP(b) Pu-4 ESD(dp)/IJP(c)
JD/WW/JG S/0129/64/000/012/0043/0044

ACCESSION NR: AP5000938

AUTHOR: Kuleshova, N.P., Lutsyak, V.G.

TITLE: Solubility of zirconium in the ferrite of low-carbon steel

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 12, 1964, 43-44, and insert facing p. 41

TOPIC TAGS: zirconium solubility, ferrite, low carbon steel, solid solution, perlite

ABSTRACT: Five different steels with approximately the same carbon content were investigated to determine the distribution of zirconium between ferrite and the carbide phase, since there is no uniformity of opinion on the solubility of zirconium in α-iron. The studies were conducted at room temperature. The steels were made in induction furnaces and cast into 65 kg ingots. Zirconium was added as an alloy (a pressed mixture of fine iron shavings and metallic zirconium) containing 30-35% Zr. The method based on the change in the phase composition during transition through the solubility boundary was used. It was found that the maximum solubility of zirconium in the ferrite of low carbon steel at room temperature did not exceed 0.14%. When the content of Zr exceeded its maximum solubility in ferrite, it was present as the free carbide, ZrC. The content of perlite was lower than usual in this case in steels of the same chemical composition

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L 21805-65

ACCESSION NR: AP5000938

but without zirconium. Orig. art. has: 1 table and 3 photomicrographs.

ASSOCIATION: Donetskiy filial Ukr NII metallov (Donets Branch of the Ukrainian Scientific Research Institute for Metals)

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 004 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSYK, V.I., inzh.; TIMCHENKO, Yu.N., inzh.

Artem automatic multipoint electronic temperature regulator.
Izv.vys.ucheb.zav.; tekh.leg.prom. no.3:123-132 '59.
(MIRA 12:12)

1. Kiyevskiy tekhnologicheskiy institut legkoy promyshlennosti.
Rekomendovana kafedroy avtomatizatsii proizvodstvennykh
protsessov.
(Temperature regulators)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSYK, V.I., inzh.; KHODOS, K.V., inzh.

Photoelectronic automatic machine for the lighting control of work stations in industrial enterprises. Izv.vys.ucheb.zav.; tekh.leg.prom. no.4:137-141 '60. (MIRA 13:10)

1. Kiyevskiy tekhnologicheskiy institut legkoy promyshlennosti. Rekomendovana kafedroy avtomatizatsii proizvodstvennykh protsessov.
(Factories--Lighting) (Automatic control)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LEVITSKIY, Mikhail Yakovlevich, kand. tekhn. nauk; LUTSYK, V.I., inzh., retsenzent; NIKIFOROVA, R.A., inzh., red.; GORNOSTAYPOL'SKAYA, M.S., tekhn. red.

[Wire potentiometers] Provolochnye potentsiometry. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1961. 113 p. (MIRA 14:9)

(Potentiometers)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

KULIKOV, Aleksandr Aleksandrovich; NEMIROVSKIY, Moisey Il'ich; VASIL'YEVA, G.B., inzh., retsenzent; LUTSYK, V.I., inzh., retsenzent; KORYTNIKOV, V.P., inzh., red.; CHISTYAKOVA, L.G., inzh., red.; GORNOSTAYPOL'SKAYA, M.S., tekhn. red.

[Collection of problems on electric machinery] Sbornik zadach po elektricheskim mashinam. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1961. 198 p. (MIRA 14:12)
(Electric machinery)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSYK V.N.

Technology

Repair of electric motors and generators, (Moskva) Mashgiz., 1951.

Monthly List of Russian Accessions, Library of Congress Oct. 1952. Unclassified

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSYK, V. N.

Dynamos

"Repair of electric motors and generators." Reviewed by P. M. Vayntrub. Prom. energ. 9, No. 5, 1952.

Monthly List of Russian Accessions, Library of Congress, August 1952. UNCLASSIFIED.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

MIZYUK, L.Ya.; LUTSYSHIN, A.S.

Elimination of errors in quadrature phase splitters with a trigger frequency divider. Geofiz. prib. no.19:45-52 '64.
(MIRA 18:9)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

L 13282-66 EWT(1) GW

ACC NR: AR5028757 SOURCE CODE: UR/0169/65/000/008/D020/D020

SOURCE: Ref. zh. Geofizika, Abs. 8D138

AUTHOR: Mizyuk, L. Ya.; Lutsyshin, A. S.

TITLE: Elimination of errors in quadrature phase splitters with flip-flop frequency dividers

CITED SOURCE: Sb. Geofiz. priborostr. Vyp. 19. L., Nedra, 1964, 45-52

TOPIC TAGS: flip flop circuit, phase splitter, phase shifter, frequency divider, DIFFERENTIATING CIRCUIT

TRANSLATION: In order to eliminate the phase shift error in quadrature phase splitters with flip-flop frequency dividers, absolute voltage symmetry is necessary at the input of the differential circuit. This condition is impossible in a sufficiently wide dynamic frequency range for previously described systems. Therefore the authors propose the addition of an intermediate flip-flop with a following differential circuit. Schematic and time diagrams are given together with a brief description of the operating principles of the proposed improved device. It is known that the unit gives a highly accurate quadrature of square voltage in a wide dynamic and

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L 13282-66

ACC NR: AR5028757

frequency signal range, and may be used in circuits for rms addition of voltage with two-phase frequency conversion, synchronous quadrature and quasi-synchronized signal reception, etc. A schematic diagram is given for a model of the unit which is used for experimental testing of its operation. It is found that the total phase shift error, due mainly to instability in flip-flop operation, is less than 0.1°. Quadrature and symmetry of the output square-wave voltages are held with a high degree of accuracy when there are changes in the input signal: (a) in frequency from 400 to 10,000 cps and (b) in amplitude from 0.1 v (minimum value) to + 40 db. The frequency range for this circuit may be expanded.

SUB CODE: 09

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APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

ACC NR: AM5027767 (N) Monograph UR/

Lutsyuk-Khudin, Vladimir Andreyevich

New method of producing bimetal plate for high pressure vessels (Novyy sposob proizvodstva tolstolistovogo dvukhsloynogo prokata dlya sosudov vysokogo davleniya) Kiev, Naukova dumka, 65. 0059 p. illus., biblio. (At head of title: Akademiya nauk Ukrainskoy SSR. Ordena trudovogo krasnogo znameni institut elektrosvarki im. YE O. Patona) 1,000 copies printed.

TOPIC TAGS: bimetal, steel, electroslag welding, pressure vessel, fabricated structural metal

PURPOSE AND COVERAGE: The brochure describes a new method of producing a bimetal plate by electroslag welding. Several ways of producing such a plate are mentioned and several metal processing problems in welding large size mixed steels are covered. Also, the brochure discusses the production of thick section welded high pressure vessels from bimetal steels. This book is recommended for scientists and technical engineers in electric welding and designing of high pressure vessels as well as for students and aspirants in the universities of corresponding specialties.

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

ACC NR: AM5027767

Preparing a thick walled plate with electroslag welding--17
Production of thick walled welded high pressure vessels from bimetal steels--41
Bibliography--58

SUB CODE: 11, 13/ SUBM DATE: 12Jan65/ ORIG REF: 047/ OTH REF: 034

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APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

SHCHUROV, V.; LUTSYUK, N.

Work practice in medical services to stockbreeders in northern Kazakhstan. Zdrav.Kazakh. 16 no.8:7-8 '56. (MLRA 10:1)

1. Zamestitel' zaveduyushchego Severo-Kazakhstanskim oblzdravotdelom (for Shchurov). 2. Zaveduyushchiy Presnovskim rayzdravotdelom (for Lutsyuk)
(KAZAKHSTAN--MEDICINE, RURAL)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSYUK, N.B.

Amount of vitamin A and carotene in some products from districts of widespread endemic goiter. Vrach. delo no.8:131-132 Ag '60. (MIRA 13:9)

1. Kafedra gigiyeny pitaniya i kommunal'noy gigiyeny (zav. - prof. A.I. Stolmakova) L'vovskogo meditsinskogo instituta.
(LVOV PROVINCE—FOOD—ANALYSIS) (VITAMINS—A)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSYUK, N.B.; DUMANSKIY, Ya.I.

Activity of nonspecific antihyaluronidase of blood serum in rats with vitamin A deficiency and excess. Vrach. delo no.6:97-98 Je '61. (MIRA 15:1)

1. Kafedra gigiyeny pitaniya (zaveduyushchiy - prof. A.I.Stolmakova) i kafedra detskikh bolezney (zaveduyushchiy - prof. S.I.Ignatov) L'vovskogo meditsinskogo instituta.

(ANTIHYALURONIDASE) (VITAMINS--A)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSYUK, N.B.

Method for determining vitamin A in the presence of carotene with the aid of dichlorohydrin reagent. Lab. delo 7 no.10:20-22 O '61. (MIRA 14:10)

1. Kafedra gigiyeny pitaniya (zav. - prof. A.I.Stolmakova) i kafedra biokhimii (zav. - dotsent B.A.Sobchuk) L'vovskogo meditsinskogo instituta.

(VITAMINS--A) (CAROTENE) (DICHLOROHYDRIN)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSYUK, N.B.

Influence of rations with a varying content of vitamin A on the iodine level of the thyroid gland in rats following use of 6-methylthiouracil. Vop. pit, 20 no.5:40-44 S-O '61. (MIRA 14:10)

1. Iz kafedry gigiyeny pitaniya (zav. - prof. A.I.Stolmakova) L'vovskogo meditsinskogo instituta.

(URACIL) (VITAMINS--A) (THYROID GLAND)
(IODINE IN THE BODY)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSYUK, N.B.

Effect of 6-methylthiouracil on the thyroid gland in vitamin A shortage or excess. Vrach. delo no.8:45-49 Ag '61. (MIRA 15:3)

1. Kafedra gigiyeny pitaniya i kommunal'noy gigiyeny (zav. - prof. A.I. Stolmakova) i kafedra gistologii (zav. - dotsent A.P. Dyban) L'vovskogo meditsinskogo instituta.
(THYROID GLAND) (VITAMINS—A) (URACIL)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSYUK, N.B.

Effect of diets containing different quantities of vitamin A and iodine on the state of the thyroid gland in rats. Vop.pit. 21 no.3:9-14 My-Je '62. (MIRA 15:10)

1. Iz kafedry gigiyeny pitaniya (zav. - prof. A.I.Stolmakova) i kafedry gistologii (zav. - dotsent A.P.Dyban) L'vovskogo meditsinskogo institua.
(VITAMINS--A) (IODINE--PHYSIOLOGICAL EFFECT)(THRYOID GLAND)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSYUK, N.B. (L'vov)

Absorption of radioactive iodine (J^{131}) by the thyroid gland when large doses of vitamin A are used. Vrach. delo no.11: 133-134 N'63 (MIRA 16:12)

1. Otdel gigiyeny pitaniya nauchno-issledovatel'skogo instituta epidemiologii, mikrobiologii i gigiyeny.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

LUTSYUK, N.B.

Review of M.I. Snigur and M.F. Radchenko's book "Hygienic evaluation of honey and methods of its study". Vop. pit. 22 no.2:92-93 Mr-Ap '63. (MIRA 17:2)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

DUMANSKIY, Ya.I.; LUTSYUK, N.B.

Nonspecific antihyaluronidase of the blood serum in rats with experimental hyper- and hypothyroidism. Biul. eksp. biol. i med. 60 no.9:46-48 S '65. (MIRA 18:10)

1. Kafedra detskikh bolezney (zav. - dotsent D.I. Ogorodnik) i kafedra gigiyeny (zav. - prof. O.V. Petrov) Ternopol'skogo meditsinskogo instituta.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

BRATUSHKO, Yu.I.; LUTSYUK, T.B.; NAZARENKO, Yu.P.

Determination of the conductivity of chloropentammine chromichlorides. Dop. AN URSR no.6:795-798 '63 (MIRA 17:7)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR. Predstavleno akademikom AN UkrSSR Yu.K. Delimarskim [Delimars'kyi, IU.K.].

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

PROVINTEYEV, I. V., kand. tekhn. nauk; VATAZHINA, V. I., kand. tekhn. nauk; LUTSYUK, V. Z., inzh.

Using rubber of depreciated goods for the manufacture of waterproofed film materials. Sbor. trud. VNIINSM no.5:65-74 '61. (MIRA 15:10)

(Rubber) (Waterproofing)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

OVCHIYEV, S.G.; LUTSYUK, V.Z.

New polymer waterproof materials. Izv.AN Arm.SSR.Ser.tekh.nauk 18 no.5:59-62 '65. (MIRA 18:12)

1. Armyanskiy nauchno-issledovatel'skiy institut stroitel'nykh materialov i sooruzheniy. Submitted June 5, 1965.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

25(1,5)

SOV/125-12-4-7/18

AUTHORS: Makara, A.M., Candidate of Technical Sciences, Novikov, I.V., Nazarov, G.V., Ryabinkin, V.I., and Institute, Welding Engineers

TITLE: Working out the Technology of "Electric Slag Welding" of Shells, Made of Medium Alloyed Steel Type AK

PERIODICAL: Avtomaticheskaya svarka, 1959, Vol 12, Nr 4, pp 55-65 (USSR)

ABSTRACT: The article presents the results of investigations, made in the Institute for Electric Welding and the "Krasnoye Sormovo" Plant. To weld the steel AK complex alloyed wires type EI 581 and EI 616 are used. The content of dangerous elements as carbon, sulphur, phosphorus in the weld is small, because there are very small amounts of them in the basic metal and in the metal of the electrode-wire. To weld AK-steel with a thickness of 50 mm following conditions were chosen: electrode feed rate: 180-200 m/h; arc-voltage: 54-55 V; welding-current: 400-440 A; depth of the slag-tub: 45-50 mm; dry-boom: 60-60 mm; diameter of

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

Working out the Technology of "Electric Slag Welding" of Shells, Made of Medium Alloyed Steel Type AK SOV/125-12-4-7/18

electrode-wire: 3mm; welding-clearance 25-28 mm; speed of welding: 0.7-0.8 m/h. Alternation current. The chemical consistence of the electrode wire is shown in schedule 1. Investigation of the macro- and micro-structure of the weld showed a coarse crystalline structure, which disappeared after heat-treatment. For electric-slag-welding the apparatus type A-372-3 (Figure 10) is used. There are 7 photographs, 2 graphs, 4 diagrams and 6 Soviet references.

ASSOCIATION: Ordena trudovogo krasnogo znameni institut elektrosvarki im. Ye.O. Patona AN USSR (Institute of the Order of the Red Banner of Labor for Electric Welding imeni Ye.O. Pator AN UkrSSR) Gor'kovskiy zavod "Krasnoye Sormovo" (Gorkiy Plant "Krasnoye Sormovo")

SUBMITTED: February 13, 1958

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APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

31441
S/125/61/000/012/005/008
D040/D112

1 2300

AUTHORS: Medovar, B.I., and Lutsyuk-Khudin, V.A.

TITLE: The problem of local failures of welded joints in austenitic steels

PERIODICAL: Avtomaticheskaya svarka, no. 12, 1961, 45-55

TEXT: The authors discuss the causes of local failure in the heat-affected zone, and concentrated intercrystalline corrosion at the fusion line in austenitic-steel welds subjected to temperatures over 580-600°C for a long period. These local failures mostly occur in steam piping made of such steel as Х18Н 12Б (Kh18N12B) used abroad and Х18Н 12Т (Kh18N12T) used in the USSR. A new laboratory test method is suggested for estimating the tendency of austenitic steel to such failures. The new method is much faster than existing methods, such as those used in the USA and Great Britain. The method uses a specimen consisting of plates of austenitic steel and carbon steel which are welded together by electro-slag welding with the aid of two electrode wires of low-carbon steel. The behavior of austenitic 18-8 type steel containing titanium and niobium, i.e. 1Х18Н 9Т(1Kh18N9T) and Х18Н 11Б

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

The problem of local ...

(Kh18N11B) steel, was studied with such specimens. The test specimens also included 1Kh14N14V3M(1Kh14N14V3M) Cr-Ni-W-Mo, EI257 (EI257) pipe steel, taken from a piece of steam pipe that failed in service after 14,136 hours at the Cherepetskaya GRES (Cherepet' State District Power Plant); the pipe was supplied by Yu.M. Nikitin of TsNIITMASh. Intercrystalline corrosion was found in all specimens which were prone to local failure in the heat-affected zone; it is supposed that the tendency to local failure in the heat-affected above 580-600°C and the tendency to shearing corrosion are caused by the very same factors. It was therefore recommended to use the same means to prevent local failures of the austenitic-steel welds as are used against shearing corrosion, e.g. excluding Ti and Nb from the steel composition, or raising their content to a level sufficient to prevent segregation of the Cr carbides even after overheating; producing a bi-phase austenite-ferritic structure in the heat-affected zone; reducing the carbon content down to the limit of its solubility in austenite at 550-800°C; improving the purity of grain boundaries in austenitic steel by improving the steelmaking processes, which could be achieved by electro-slag remelting, for example, particularly in the case of

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APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

The problem of local ...

steel containing Ti and Nb. Engineers V.Ya. Sayenko, L.G. Puzrin, G.A. Pavliychuk and N.I. Pinchuk took part in the experimental investigation. K.V. Lyubavskiy is also mentioned. There are 8 figures, 2 tables and 22 references: 9 Soviet and 13 non-Soviet-bloc. The four most recent references to English-language references read as follows: R.N. Younger, R.G. Baker, Heat-affected zone cracking in welded high-temperature austenitic steels, "Journ.Iron and Steel Inst.", v. 196, p. 2, Oct. 1960; R.J. Truman, H.W. Kirkby, Some ductility aspects of 18-12-1Nb steel, "Journ. Iron and Steel Inst.", v. 196, p. 2, Oct. 1960; K.J. Irvin, J.D. Murray, F.B. Pickering, The effect of heat-treatment and microstructure on the high-temperature ductility of 18% Cr - 12% Ni - 1% Nb steels, "Journ. Iron and Steel Inst.", v. 196, p. 2, Oct. 1960; N.E. Moore, J.A. Griffiths, Microstructural causes of heat-affected zone cracking in heavy section 18-12-Nb austenitic stainless steel welded joints, "Journ. Iron and Steel Inst.", v. 197, p. 1, Jan. 1961.

ASSOCIATION: Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O.Patona AN USSR (Electric Welding Institute "Order of the Red Banner of Labor" im. Ye.O.Paton, AS UkrSSR)

SUBMITTED: August 4, 1961

Card 3/3

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001030930006-9

36074
S/135/62/000/004/007/016
A006/A101

18.1111

AUTHORS: Medovar, B. I., Doctor of Technical Sciences, Chekotilo, L. V., Pinchuk, N. I., Lutsyuk-Khudin, V. A., Engineers

TITLE: Intercrystalline weld-adjacent cracks in welding austenite steels and alloys

PERIODICAL: Svarochnoye proizvodstvo, no. 4, 1962, 17-21

TEXT: The authors, with the participation of engineer L. G. Puzrin, present some concepts on the formation of weld-adjacent intercrystalline cracks in flash-welding of austenite steels and alloys. During this process the following types of crack may arise: 1) crystallization cracks extending into the weld, or originating in the weld; 2) cracks along the fusion line at a distance from one to several grains; 3) cracks along the linear clusters of intermetallic and nonmetallic impurities. An effective means of preventing crystallization cracks in heat-resistant austenite steels, is to raise the boron content in the weld metal, for the purpose of increasing the quantity of boride eutectics, which is able to close-up weld-adjacent cracks. To prevent cracks which run at an equal distance from the fusion line, it is imperative not to

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allow superheating of the base metal and slow cooling in the temperature range of least resistance of the gamma-solid solution. Changes in the chemical composition of the steel or alloy, and, first of all, a reduced carbon content and the development of a second phase in the structure, should help to prevent the formation of weld-adjacent cracks of this type. To prevent cracks along linear clusters of impurities, it is necessary to use for stressed parts a metal that had been subjected to electric slag remelting in order to raise sharply its micro-homogeneity. Electric slag remelting is simultaneously a reliable means of preventing weld-adjacent crystallization cracks. There are 7 figures and 12 references: 9 Soviet-bloc and 3 non-Soviet-bloc.

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AUTHORS: Medovar, B.I., Chekotilo, L.V., Lutsyuk-Khudin, V.A., Pinchuk, N.I., and Puzrin, L.G.

TITLE: Alloying heat-resistant austenitic steels, alloys and welds with 0.3 - 1.5% boron

PERIODICAL: Avtomaticheskaya svarka, no. 5, 1962, 9-17

TEXT: The authors review data from their own experiments and from 22 Soviet and non-Soviet publications, and show that heat-resistant austenitic metal, alloyed with 0.3 - 1.5% boron, features increased long-term strength and crack-resistance. It is proved that metal containing boron as an alloying element has a two-phase (austenitic and eutectic boride) structure, which improves the properties of the metal. As revealed by Medovar and Lutsyuk-Khudin, ("Avtomaticheskaya svarka", no. 12, 1961), 0.015 - 0.020% B in steel leads to local fusion of the grain boundaries and to the growth of hot cracks which

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Alloying heat-resistant austenitic steels....

can subsequently cause local failure of welds; however, no austenitic steel samples with more than 0.35% B were prone to local failure in the weakness zone. According to data presented by Professor G.V. Estulin and Engineer L.Ye. Ivanova, boron greatly increases the heat-resistance of welds, e.g. addition of 0.41% B to Kh18N11B (Kh18N11B) type welds almost doubled the strength of welds in 100-hour tests at 650°C under a load of 20-36 kgf, or raised the pre-failure test time ten times. Similar results were obtained with Kh15N35 (Kh15N35) welds. Welding of steel with not more than 0.8 - 1.0% B caused no difficulties, but higher B content increased the cold cracking danger because of lowered plasticity and a large eutectic phase. It is advised to use pre-heating and moderated cooling in welding such steel. Electroslag remelting is suggested for improving the plasticity of boron-alloyed steel destined for fabrication with deformation, i.e. rolling. Conclusions: Alloying heat-resistant austenitic steels and welds with over 0.3 - 0.4% boron greatly increases the resistance to crystallization cracks, practically eliminates the danger of hot cracks appearing at the welds, produces very good welded joints in service at high temperature and loads, and considerably improves the heat

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